



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,250	09/09/2003	Jaap Herman van't Hoff	7913-038-999	4047
7590		05/16/2008	[REDACTED]	
FISH & RICHARDSON, P.C.			EXAMINER	
1425 K Street, N.W.			RIVELL, JOHN A	
11th Floor			ART UNIT	PAPER NUMBER
Washington, DC 20005-3500			3753	
			MAIL DATE	DELIVERY MODE
			05/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/657,250	VAN'T HOFF, JAAP HERMAN	
Examiner	Art Unit		
JOHN RIVELL	3753		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 2/11/08 (Req for Recon.).
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 11, 13, 14, 17-25 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 11, 13, 14, 17-21, 25 and 28 is/are rejected.
- 7) Claim(s) 22-24 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

Applicant's arguments filed February 11, 2008 have been fully considered but they are not persuasive.

Claims 1-10, 12, 15, 16, 26 and 27 have been canceled. Claims 11, 13, 14, 17-25 and 28 remain pending. The Terminal Disclaimer filed February 11, 2008 has been reviewed and accepted.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 13, 14, 17-21, 25, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cruysberghs (U. S. Pat. No. 5,368,207), the embodiment of figures 8-9 in view of the embodiment of figures 3, further in view of Alfons (U. S. Pat. No. 5,285,931).

In the patent to Cruysberghs, the embodiment of the device of figs. 8-9 discloses a "pressure control device (generally at 134, figure 8) for maintaining a constant predetermined excess pressure in a fluid dispensing container (10), which device (134) comprises a first chamber (166), a fluid connection (via valve 144, chamber 152 and port 136a) between the first chamber (140) and the container (10), wherein the fluid connection comprises a first opening (opening 138a) in the sidewall (at plate 138) of the first chamber, a valve (at 144) with a closing member (rod 144) for releasing and closing said fluid connection and a resilient pressure element (gas pressure in chamber 150) exerting said predetermined excess pressure onto the closing member in a closing direction, the resilient pressure element comprising a second chamber (150; defined as

the entire chamber encompassed by the left end of body 136 to the left surface of plunger 146) being filled with a gas at the predetermined excess pressure and relative to which the closing member (144) is movable, the second chamber is provided with a second opening (read at the right otherwise open end of the cylinder enclosing space 152), the closing member (144) extending from the first chamber (140) through the first and second opening (on opposite sides of plate 138) to the second chamber (to the left of plate 138), a first subsurface (the right end of rod 144 at 144a) of the closing member being situated in the first chamber (140) and a second subsurface (the left face of plunger 146) of the closing member (144) being situated in the second chamber (as defined above), the first chamber (140) being filled with a gas at a pressure higher than said predetermined excess pressure (in chamber 150), the size of the first subsurface (e.g. the end of stem 144 at 144a extending within the first chamber 140) is substantially smaller than the size of the second subsurface (the right face of plunger 146), such that the gas pressure in the first chamber (140) results in that the force on the first subsurface (the end of the stem 144 at 144a extending within and therefore subject to fluid pressure within first chamber 140) is smaller than the force on the second subsurface (the right face of plunger 146) resulting from the predetermined excess pressure (within chamber 150), while in use the first opening (at valve 144) is released if the fluid pressure in the container (10) drops below the predetermined excess pressure (in chamber 150), so that gas flows from the first chamber (140) to the container (10) and the pressure in the container (10) increases until the first opening (at valve 144) is closed again by the closing member (144) as a result of the increased pressure in the container (10 acting on the right face of plunger 146), wherein the second chamber (150) consists of a cylinder (e.g. the external wall(s) of the body 136) which is closed at a first (left) end and of which a second (right) end constitutes said second opening

(closed off by plate 138), and the closing member (144) comprises a plunger (146) movable in axial direction of the cylinder so as to change the volume of the second chamber (150), and wherein the closing member (at valve 144) is movable in a reciprocated manner between a first (open) extreme position and a second (closed) position, whereby the fluid connection is closed, which first and second extreme positions are defined by an axial extend [extent] of a... recess (i.e. the axial length distance between positions where the seal 142 contacts the surface of rod 144 at the opposite ends of groove 144b) in the valve (stem) and the release (open) position of the closing member is defined between the first and second closing positions" as recited in claim 11.

The embodiment of figures 8 and 9 of Cruysberghs thus discloses all the claimed features with the exception of having a "circumferential" groove at groove 144b as well as "the second subsurface (of the plunger, e.g. the left facing surface of plunger 146 of Cruysberghs) forms a cavity in the plunger of the closing member".

Firstly, the patent to Alfons discloses that it is known in the art to employ a "circumferential recess" at recess 17 surrounding the valve rod 10 for the purpose of providing the largest cross sectional area for flow through the valve thus avoiding the hindrance to flow an otherwise smaller cross sectional area would present.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of figures 8 and 0 of Cruysberghs a "circumferential recess" at groove 144b for the purpose of providing the largest cross sectional area for flow through the valve thus avoiding the hindrance to flow the otherwise smaller cross sectional area of groove 144b would present as recognized by Alfons.

Secondly, the embodiment of fluid piston at figure 3 of Cruysberghs discloses that it is known in the art to employ a piston element, responsive to fluid pressure thus acting as an actuator from one side and acting as a valve on the opposite side, which actuator side of the piston includes a “cavity” at 50 for the purpose of providing a larger volume for the “second” gas pressure chamber which, relative to the smaller volume chamber at 150 of Cruysberghs, would allow for limited fluid pressure leakage across the seal of the plunger maintaining a constant pressure value in the pressure chamber.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of figures 8 and 9 of Cruysberghs, a “cavity” in the plunger 146, on the pressure chamber 150 side of the plunger 146 for the purpose of providing a larger volume for the “second” gas pressure chamber 150 which, relative to the smaller volume chamber at 150 of Cruysberghs, would allow for limited fluid pressure leakage across the seal 148 of the plunger 146 of Cruysberghs while maintaining a constant pressure value in the pressure chamber 150 as recognized in the embodiment of piston element of figure 3 of Cruysberghs.

Regarding claim 13, in Cruysberghs, as modified, “at the first and second extreme positions, a gas seal is formed by contact between a first sealing ring (138 of Cruysberghs) and an outer edge of the closing member” at opposing ends of groove 17 taught by Alfons, as recited.

Regarding claim 14, in Cruysberghs, as modified, “the closing member (of Cruysberghs) comprises a stem (144) with the circumferential recess (taught by groove 17 of Alfons)” as recited.

Regarding claim 17, in Cruysberghs, as modified, “the plunger (146 of Cruysberghs) is sealed by an outer second sealing ring (148) with respect to the inner wall of the second chamber (150)” as recited.

Regarding claim 18, in Cruysberghs, as modified, “a sidewall of the cylinder, at a position located outside the second chamber, is provided with an opening (136a) through which said fluid connection extends to the container (10)” as recited.

Regarding claim 19, in Cruysberghs, as modified, “the second chamber (150) is located outside the first chamber (140)” as recited.

Regarding claim 20, in Cruysberghs, as modified, “the closing member (at valve 144) is located substantially outside the first chamber (140)” as recited.

Regarding claim 21, in Cruysberghs, as modified, “the volume of the first chamber (140) is substantially greater than the volume of the second chamber (150)” as recited.

Regarding claim 25, in Cruysberghs, as modified, “a container (at container 10) is provided with a device according to claim 11” as recited.

Regarding claim 28, the embodiment of figures 8 and 9 of Cruysberghs discloses a “pressure control device (at 134, fig. 8) for maintaining a constant predetermined excess pressure in an inner space of a fluid dispensing container (10), the pressure control device including: a cylinder (the body 136) having a closed first (left end) axial end and open second (right side otherwise closed off by plate 138) axial end; the second (right) axial end being adapted for fluid communication with a first chamber (140) by means of a first opening (138a); a closing member (at 144) comprising a plunger (at 146) having a stem (144) axially extending from one axial end of the plunger (146); wherein a free end of the stem defines a first subsurface (read at the right end of the rod 144 at 144a) and an axial end of the plunger opposite the stem (read at the left face of plunger 146) defines a second subsurface; the closing member being engaged for axial movement in the cylinder and defining a second chamber (150) between the second subsurface (the left face of plunger 146) on the opposite axial end

of the plunger, and the first axial end of the cylinder and a space between the one axial end of the plunger and the first opening; the stem (144) extending into the first opening (at 138a) and being provided with a (groove 144a) located between the plunger (146) and the first subsurface (at 144a); the first opening (at 138a) is provided with a first sealing ring (142), which together with the stem (144) defines a valve and which first sealing ring (142) is positioned to extend either into the (groove 144a) of the stem (144) of the closing member to define a released (open) position of the valve or is adapted to engage the stem (144) to close the first opening (138a) and thereby defining a dosed position of the valve; a fluid connection being defined between a first chamber (140) and an inner space of a fluid dispensing container (10) by means of at least the first opening (138a) and the space (at 152); the plunger (146) or an outer circumference between its axial ends is provided with a second seal ring (148) which constitutes a gas seal between the outer circumference of the plunger (146) and an inner circumferential surface of the cylinder; wherein a resilient pressure element (i.e. gas pressure within chamber 150) biases the closing member (144) into a closed portion of the valve" as recited.

The embodiment of figures 8 and 9 of Cruysberghs thus discloses all the claimed features with the exception of having a "circumferential" groove at groove 144b as well as "the second subsurface (of the plunger, e.g. the left facing surface of plunger 146 of Cruysberghs) forms a cavity in the plunger of the closing member".

Firstly, the patent to Alfons discloses that it is known in the art to employ a "circumferential recess" at recess 17 surrounding the valve rod 10 for the purpose of providing the largest cross sectional area for flow through the valve thus avoiding the hindrance to flow an otherwise smaller cross sectional area would present.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of figures 8 and 0 of Cruysberghs a “circumferential recess” at groove 144b for the purpose of providing the largest cross sectional area for flow through the valve thus avoiding the hindrance to flow the otherwise smaller cross sectional area of groove 144b would present as recognized by Alfons.

Secondly, the embodiment of fluid piston at figure 3 of Cruysberghs discloses that it is known in the art to employ a piston element, responsive to fluid pressure thus acting as an actuator from one side and acting as a valve on the opposite side, which actuator side of the piston includes a “cavity” at 50 for the purpose of providing a larger volume for the “second” gas pressure chamber which, relative to the smaller volume chamber at 150 of Cruysberghs, would allow for limited fluid pressure leakage across the seal of the plunger maintaining a constant pressure value in the pressure chamber.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of figures 8 and 9 of Cruysberghs, a “cavity” in the plunger 146, on the pressure chamber 150 side of the plunger 146 for the purpose of providing a larger volume for the “second” gas pressure chamber 150 which, relative to the smaller volume chamber at 150 of Cruysberghs, would allow for limited fluid pressure leakage across the seal 148 of the plunger 146 of Cruysberghs while maintaining a constant pressure value in the pressure chamber 150 as recognized in the embodiment of piston element of figure 3 of Cruysberghs.

Response to Arguments

Applicants argument that the modification of Cruysberghs by the inclusion of an annular “circumferential groove”, as taught by Alfons, in place of the notch at 144a of

Cruysberghs may conceivably render an ill working device on the basis that the now circumferential groove present on the rod 144 of Cruysberghs would not contact the seal when aligned with the seal thus potentially permitting the rod to become misaligned or tilted with respect to the longitudinal axis of reciprocation and potentially damaging the seal is unpersuasive for several reasons.

Firstly, the conditions applicant has expressly identified are clearly shown in the secondary reference of Alfons. When the “circumferential groove” 17 of Alfons is aligned with the seal 18 of Alfons, the rod 10 is no longer in contact with the seal 18 and may potentially become misaligned or tilted with respect to the longitudinal axis of reciprocation. Yet this is the teachings of Alfons. Merely because the proposed combination, working as intended, allegedly may not work properly, on the basis of the explicit teachings of the secondary reference, is not conclusive that the proposed combination will not work.

Secondly, and more interestingly, applicants’ own claimed device exposes these same conditions. Just as argued, applicants rod 34 , when circumferential notch 22 is not aligned with the seal 20, has its circumference in sealing contact with the seal 20 precluding the escape of fluid from chamber 4. When the notch 22 is aligned with the seal, the circumference of the rod is no longer in contact with the seal thus potentially allowing the very same argued misaligned or tilted condition and resultant potential seal damage. Merely because the proposed combination of structures may result in an alleged unwise condition of the proposed device, which unwise condition is indeed

expressed by the structure of the claimed device, is not conclusive of the unobviousness of the proposed combination of references.

Additionally, applicants argument that the proposed combination including the embodiment of piston of figure 3 is a result of “speculative hindsight” is unpersuasive.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In this instance, comparing the two distinct embodiments, the piston of figure 3 will allow for more volume in the prepressurized chamber at the left end of the piston because of the cavity shown in the left end of the piston, relative to the flat left face of the piston of figures 8-9 and chamber 150 therein. This additional volume of space will allow for more volume of gas to occupy this additional space relative to the chamber of the embodiment of figures 8-9 which does not include this additional space. The further argument that Cruysberghs expresses no written interest in the embodiment of figures 8-9 concerning fluid leakage across seal 148, while correct, is of no moment concerning potentially modifying the structure of figures 8-9 to potentially amend the structure to avert such potential. That is, the problem need not be identified by the patentee in

order to modify patentee's structure to avoid potential pitfalls associated with such structure. The seal element 148 will, at some time allow acceptable leakage of fluid from the higher pressure chamber on the left of the piston over the lifetime of the product. Relative to the embodiment of figures 8-9, the piston embodiment of figure 3 would extend this lifetime by allowing for more volume of gas to occupy the presressurized chamber, in spite of the acceptable fluid leakage. Clearly this would be a desirable advantage to have.

Claims 22-24, in view of the now accepted Terminal Disclaimer, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN RIVELL whose telephone number is (571)272-4918. The examiner can normally be reached on Mon.-Fri. from 6:00am-2:30pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*/John Rivell/
John Rivell
Primary Examiner
Art Unit 3753*

j.r.